UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/635,867	08/06/2003	Susumu Kashiwase	848075-0053	8336

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EXAMINER
NGO, NGUYEN HOANG

ART UNIT	PAPER NUMBER
2473	

MAIL DATE	DELIVERY MODE
12/23/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
	10/635,867	KASHIWASE, SUSUMU
Office Action Summary	Examiner	Art Unit	
	NGUYEN NGO	2473	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS,
WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>20 November 2009</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
   closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-21 and 28-52</u> is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-21 and 28-52</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
      application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Response to Amendment

This communication is in response to the RCE of 11/20/2009. All changes to the

Claims have been entered. Accordingly, Claims 1-21, 28-44, and 45-52 are currently

pending in the application.

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed
> or described as set forth in section 102 of this title, if the differences between the
> subject matter sought to be patented and the prior art are such that the subject
> matter as a whole would have been obvious at the time the invention was made
> to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was
> made.

2.   The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

    1.   Determining the scope and contents of the prior art.
    2.   Ascertaining the differences between the prior art and the claims at issue.
    3.   Resolving the level of ordinary skill in the pertinent art.
    4.   Considering objective evidence present in the application indicating
            obviousness or nonobviousness.

3.   Claims 1-11, 16-21, 28-40, 45-52 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Gitlin et al. (US 6018528), in view of Yano et al. (US 6563806),

hereinafter referred to as Gitlin and Yano.

Regarding claim 1, 16, 28, 45 Gitlin discloses a communication system comprising:

a first wireless communication terminal (low-speed users D, K, N, P, R, S, T of

figure 5) for performing a packet communication (communications transmission

medium, column2 lines 58-60) with respect to said base station by using one

carrier (low-speed users will be permitted to fill one or more of the available time

slots 44 in a frame (one carrier), column 4 lines 88-23 and 50 of figure 5); and

a second wireless communication terminal (high speed users B, G, L of figure 5)

for performing a packet communication with respect to said base station by using

a plurality of carriers at the same time (higher-speed users can fill one ore more

of the available frequency bands 42 (plurality of carriers) or time slots 44, col4

lines 20-23),

Gitlin however fails to specifically disclose the specific limitation of a base station

and it's specific components. Gitlen however discloses of cellular communication

systems that may use the concept described above (col1 lines 5-31) and it is well-

known that a cellular communication system comprises a base station. In a similar

endeavor, Yano discloses of such a system comprising a base station, a first

wireless communication terminal and a second wireless communication terminal
(figure 1 and abstract). Yano further discloses;

allocation information allocating section for allocating allocation information for
one charier or a plurality of carriers to a wireless communication terminal when at
least one carrier is allocated to either said first wireless communication terminal or
said second wireless communication terminal (processor (CPU) which serves as
channel assignment unit based on the invention and generating a information frame
indicative of granting a multi-channel assignment (plurality of carriers) or indicative of
granting a single-channel assignment (one carrier) which are transmitted by
basestation to the mobile stations, abstract and col4 lines 63-68 and col4 lines 41-
67 and col12 lines 34-53 and col9 lines 34-43 and figure 2);

an allocation information storage section for storing said allocation information for
one carrier or a plurality of carriers (ram which stores various tables wherein a first
management table is used for registering at least on candidate channel for single-
channel communications (one carrier) and a second management table for
registering a group of candidate channels for multi-channel communications
(plurality of carrier), col3 lines 1-15 and col4 lines 63-67 and col5 lines53- col6 line 7
and figure 2).

the allocation information is for identifying a wireless communication terminal
communicating with the base station (base station receives a control message
(which identifies the wireless communication terminal) of requesting the channel
assignment from a mobile station, checks whether the mobile station is a single

channel or multi-channel station and assigns a channel with reference to the tables, col9 lines 33-40). Thus the Examiner correlates the tables to identifying how a wireless terminal is communicating with the base station (which channel), in which the terminal is identified from the control message.

It would thus be obvious to a person skilled in the art at the time the invention was made to incorporate the concept of optimizing spectral efficiency using time-frequency code slicing as disclosed by Gitlin into the system comprising a base station for assigning communication channels as disclosed by Yano in order to send data between base stations and user terminals in a efficient manner.

Regarding claim 2, 3, 29, 30, the combination of Gitlin and Yano, more specifically Yano discloses a wireless communication system as claimed in claim 1 wherein said allocation information storage section stores said allocation information in such a manner that said allocation information is arrayed in accordance with a predetermined sequence; and said allocation information applying means allocates said allocation information with respect to said first wireless communication terminal from one direction of said array, and also allocates said allocation information to said second wireless communication terminal from the other direction of said array (col5 lines 35-45).

Regarding claim 4, 31, the combination of Gitlin and Yano, more specifically Yano

discloses having said allocation information storage section store the allocation

information allocated to said wireless communication terminal as separate arrays (col5

line51-col6 line8 and col15 lines 25-56).

Regarding claim 5, 9, 17, 19, 21, 32, 38, 46, 50, 52, the combination of Gitlin and

Yano, more specifically Gitlin discloses a wireless communication system as claimed in

claim 1 wherein said packet communication is carried out by using a variable length

packet (figure 4).

Regarding claim 6, 7, 10, 11, 18, 20, 35, 36, 39, 40, 49, 51 the combination of Gitlin

and Yano, more specifically Gitlin discloses a communication system as claimed in

claim 1, further time slot allocating section for allocating time slots which are used

in packet communications by said first and second wireless communication terminals

(as seen in figure 5), the time slot allocating section allocates one wireless

communication terminal among said first and second wireless communication terminals

to one unit of a time slot distribution used by said first (low-speed users D, K, N, P, R, S,

T being allocated one time slot as seen in figure 5) and second wireless communication

terminals in the packet communications every said carrier (high-speed user G being

allocated to time slots across frequency bands f0 to f6 of figure 5). Gitlin further

discloses allocation of first wireless communication terminal and second wireless

communication terminal be in an independent manner (independent transmissions, col8
lines 24-30).

It should further be noted that Yano discloses that in TDMA, carrier frequencies are
used to transmit a frame, which includes multiple time slots having these carrier
frequencies (col5 lines 5-13) thus the base station of Yano discloses a frame allocating
section (figure 2).

Regarding claim 8, 37 the combination of Gitlin and Yano fails to specifically disclose
allocating said first wireless communication terminal and said second wireless
communication terminal in an alternate manner. However this would have been
obvious to a person skilled in the art to alternate allocations between users, as this is
simply a network parameter that may be chosen by the network/administrator. It should
further be noted that this is simply a system design choice.

Regarding claims 33, 34, 47, 48, the combination of Gitlin and Yano, more specifically
Yano discloses a wireless communication system as claimed in claim 28 wherein when
said second wireless communication terminal performs the communication by using
said plurality of carriers, said allocation information applying section allocates said
single-carrier/multi-carrier allocation information to said second wireless communication

terminal in a case that said multi-carrier/single carrier allocation information is

unavailable (col2 lines 56-67 and col10 lines 1-12 and col12 lines 20-33).

4.   Claims 12-15, 41-44, are rejected under 35 U.S.C. 103(a) as being unpatentable

over Gitlin et al. (US 6018528), in view of Yano et al. (US 6563806), in further view of

Krishnamoorthy et al. (US 2002/0051424), hereinafter referred to as Gitlin, Yano, and

Krishnamoorthy.

Regarding claim 12-15, 41-44 the combination of Gitlin and Yano fails to specifically

disclose having the time slot distribution determining section determine the time slot

distributions which can be used by said first wireless communication terminal and said

second wireless communication terminal based upon a comparison result. Yano

however discloses selecting a channel that meets the specified communication quality

(col1 lines 34-40). Krishnamoorthy however discloses a method for assigning time slots

to a user based upon user's data rate requirement, the actual data rate, and quality of

service contracted for by the user. Krishnamoorthy further discloses that the

assignment of the time slots within the frame is made dynamically (abstract and page 1

[0004]). It would have thus been obvious to a person skilled in the art at the time the

invention was made to incorporate the concept of determining the time slot distributions

which can be used by a user as disclosed by Krishnamoorthy, into the method of

optimizing spectral efficiency using time-frequency code slicing as disclosed by Gitlin

and Yano in order to efficiently determine the allocation of time slots to different users.

Response to Arguments

1.   Applicant's arguments filed 10/12/2009 have been fully considered but they are

not persuasive.

2.   In response to applicant's argument that the references fail to show certain

features of applicant's invention, it is noted that the features upon which applicant relies

(i.e., MAC index) are not recited in the rejected claim(s). Although the claims are

interpreted in light of the specification, limitations from the specification are not read into

the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to NGUYEN NGO whose telephone number is (571)272-

8398. The examiner can normally be reached on Monday-Friday 7am - 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Kwang Yao can be reached on (571)272-3182. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KWANG B. YAO/
Supervisory Patent Examiner, Art Unit 2473

/N. N./

Examiner, Art Unit 2473